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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/964,205	09/26/2001	Young-Jin Park	2001P17889 US	1840
25962	7590	07/28/2004	EXAMINER	
SLATER & MATSIL, L.L.P. 17950 PRESTON RD, SUITE 1000 DALLAS, TX 75252-5793			WILSON, ALLAN R	
			ART UNIT	PAPER NUMBER
			2815	

DATE MAILED: 07/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/964,205

Applicant(s)

PARK ET AL.

Examiner

Allan R. Wilson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,6-9,11-14,18 and 20-22 is/are rejected.
- 7) ☒ Claim(s) 3-5,10,15-17,19,23 and 24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Claim Objections

Claims 2, 20 and 21 are objected to because of the following informalities:

Claim 2, line 1, “liens” should be --lines--.

Claims 20 and 21 recite the limitation “said one level” and “said another level.” There is insufficient antecedent basis for this limitation in the claim. Should probably depend on claim 11.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2 and 6-9 are rejected under 35 USC § 102(b) as being anticipated by Teong U.S. Patent No. 5,693,563.

With regards to claim 1, Teong illustrates in figures 1-7, particularly figure 7, (entire document) a first substantially planar dielectric layer 15; first conductive lines 4, 7, 18 on a first level and located in said first dielectric layer; a second substantial planar dielectric layer 25 formed over said first dielectric layer; second conductive lines 11, 17, 28 on a second level and located in said second dielectric layer; and at least one of said first conductive lines or said second conductive lines comprising a non-rectangular shaped cross-section.

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With regards to claim 2, Teong illustrates in fig. 7 both said first conductive lines 4, 7, 18 and said second conductive lines 11, 17, 28 have a non-rectangular cross-section.

With regards to claim 6, Teong illustrates in fig. 7 the uppermost portion of said conductive lines 4, 7, 18 in said first level is co-planar with the lowermost portion of said conductive lines 11, 17, 28 in said second level.

With regards to claims 7 and 8, Teong illustrates in fig. 7 at least one sidewall of said non-rectangular shaped cross-section is non-vertical (horizontal).

With regards to claim 9, Teong discloses throughout the conductive lines comprise copper.

Claims 11, 13, 14, 18 and 20-22 are rejected under 35 USC § 102(b) as being anticipated by Blumenfeld U.S. Patent No. 4,030,116.

With regards to claim 11, Blumenfeld illustrates in figures 1 and 3 (entire document) first conductive parallel lines (32 in first row) on one level separated by a selected pitch; second conductive parallel lines (32 in second row) on another level separated by said selected pitch and having a non-rectangular shaped cross-section such that said first and second said conductive parallel lines may be arranged (d by D) to reduce capacitance between said first and second conductive parallel lines at said selected pitch.

The limitation “reduce capacitance” is an inherent function of the structure and since the prior art has the same structure as the claimed invention it will have the same inherent function.

With regards to claim 13, Blumenfeld illustrates in figs. 1 and 3 said first conductive parallel lines (32 in first row) have a non-rectangular cross-section.

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With regards to claim 14, Blumenfeld illustrates in figs. 1 and 3 said cross-sectional shape of said first and second conductive parallel lines 32 is triangular shape.

With regards to claim 18, Blumenfeld illustrates in figs. 1 and 3 said conductive parallel lines 32 on said another level have first and second sidewalls and wherein at least one of said first and second sidewalls is non-vertical.

With regards to claims 20 and 21, (assuming they depend from 11) Blumenfeld illustrates in figs. 1 and 3 said one level (32 in first row) is a lower level and said another level (32 in second row) is an upper level or said one level is an upper level and said another level is a lower level.

With regards to claim 22, Blumenfeld illustrates in figs. 1 and 3 the first and second sidewalls 32 are completely non-vertical.

Claims 11 and 12 are rejected under 35 USC § 102(b) as being anticipated by Licata, U.S. Patent No. 5,726,498.

With regards to claim 11, Licata illustrates in figures 1-10C, particularly fig. 1, (entire document) first conductive parallel lines 2 on one level separated by a selected pitch; second conductive parallel lines 3 on another level separated by said selected pitch and having a non-rectangular shaped cross-section such that said first and second said conductive parallel lines may be arranged to reduce capacitance between said first and second conductive parallel lines at said selected pitch.

The limitation “reduce capacitance” is an inherent function of the structure and since the prior art has the same structure as the claimed invention it will have the same inherent function.

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With regards to claim 12, Licata illustrates in fig. 1 said first conductive parallel lines 2 have a rectangular cross-section.

Allowable Subject Matter

Claims 3-5, 10, 15-17, 19, 23 and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from an examiner should be directed to Primary Examiner Allan Wilson whose telephone number is (571) 272-1738. Examiner Wilson can normally be reached 7:00-4:00 Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1664. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Allan R. Wilson
Primary Examiner
July 26, 2004